

# Program for NISAR Science & Applications Workshop

Space Applications Centre (ISRO), Ahmedabad

19-20 November 2015

Venue: SAC New Auditorium

19 November THURSDAY			PDF
0900 – 1000	<i>Security Clearance &amp; Registration of Participants (Basement of New Auditorium)</i>		
1000 – 1005	Welcome Address	Raj Kumar, SAC	-
1005 – 1015	Opening Remarks	Director, SAC	-
1015 - 1030	Inaugural Address	Chairman, ISRO	-
1030 – 1045	NISAR Mission & Science Goals	Paul Rosen, JPL	
1045 – 1055	NASA Perspectives on the NISAR Mission	Sanghamitra Dutta, NASA HQ	
1055 - 1100	Updates on L&S band Airborne SAR Mission	M. Ramanujam, SAC	<a href="#">IN-01</a>
1100 – 1130	<i>Tea Break Followed by Group Photo</i>		
<b>1130 – 1300: PLENARY SESSION – I (Application Theme Presentations)</b> <i>(Co-Chairs: Shri N.S. Pillai, Ex-SAC &amp; Dr. Gerald Bawden, NASA HQ)</i>			
1130 – 1145	SAR Applications in Cryosphere	A. Ganju, Director, SASE	<a href="#">P1-01</a>
1145 – 1200	SAR Applications in Ecosystem	Paul Siqueira, UMass	
1200 – 1215	Ice-sheet mapping using NISAR	Ian R. Joughin, University of Washington	
1215 – 1230	Remote Sensing Applications in GSI with special reference to Microwave Remote Sensing	V. Singaraju, Director, GSI	<a href="#">P1-04</a>
1230 – 1245	SAR Applications in Disaster Management	G. Srinivasa Rao, NRSC	<a href="#">P1-05</a>
1245 – 1300	SAR Applications in Ocean & Atmosphere	Raj Kumar, SAC	<a href="#">P1-06</a>
1300 – 1400	<i>Lunch Break</i>		
1400 – 1430	<b>Poster Session -1 (First-floor Lobby of New Auditorium)</b>		
<b>1430 – 1530: PLENARY SESSION – II (Presentations by Ministry/ Departments/ PSU)</b> <i>(Co-Chairs: Dr. D.V.A. Raghava Murthy, ISRO HQ &amp; Dr. Sanghamitra Dutta, NASA, HQ)</i>			
1430 - 1530	10 Minutes Presentations	<ol style="list-style-type: none"> <li>1. Geological Survey of India</li> <li>2. Forest Survey of India</li> <li>3. Survey of India</li> <li>4. Directorate General of Shipping</li> <li>5. Central Water Commission</li> <li>6. National Disaster Management Authority</li> </ol>	<a href="#">GSI</a> <a href="#">FSI</a> <a href="#">DGS</a>
1530 – 1600	<i>Tea Break</i>		
<b>1600 – 1800: PLENARY SESSION – III (Presentations by Ministry/ Departments/ PSU)</b> <i>(Co-Chairs: Shri D.K. Das, SAC &amp; Dr. Scott Hensley, JPL)</i>			
1600 – 1800	10 Minutes Presentations	<ol style="list-style-type: none"> <li>7. National Sample Survey Office (Min. of Statistics)</li> <li>8. Min. of Water Resources</li> <li>9. National Centre for Earth Sciences</li> <li>10. Niti Aayog</li> <li>11. NCRB, Min. of Home Affairs</li> <li>12. CMPDI, Min. of Coal</li> <li>13. Instt of Seismological Research</li> <li>14. ONGC</li> <li>15. NTPC</li> <li>16. NIWE, Chennai</li> <li>17. INCOIS, Hyderabad</li> <li>18. State Remote Sensing Centres</li> <li>19. IRS, Anna Univ., 20. DeitY</li> </ol>	<a href="#">NSSO</a> <a href="#">NCES</a> <a href="#">NCRB</a> <a href="#">CMPDI</a> <a href="#">ISR</a> <a href="#">ONGC-1</a> <a href="#">ONGC-2</a> <a href="#">NTPC</a> <a href="#">NIWE</a> <a href="#">DeitY</a>
1800 – Onwards	<i>High Tea and Adjourn</i>		

**0930 – 1100: PLENARY SESSION – IV**  
**(Special Session on Cal-Val, SAR Tools, SAR Data Processing & Simulation)**  
**(Co-Chairs: Prof. OPN Calla, ICRS & Dr. Bruce Chapman, JPL)**

0930 – 1000	SAR Principles & Processing	Tapan Misra, SAC	
1000 – 1010	SAR Cal/val	Raju G., Jain Univ., Karnataka	<a href="#">P4-02</a>
1010 – 1020	PollnSAR Experiments using L-SAR data over Vegetated terrains	Marco Lavallo, JPL	<a href="#">P4-03</a>
1020 – 1030	Better Science Return through Physics based Simulations	Uday Khankhoje, IIT Delhi	<a href="#">P4-04</a>
1030 – 1040	UAVSAR Cal/Val Program	Scott Hensley, JPL	<a href="#">P4-05</a>
1040 – 1100	<i>(04 Short Presentations of 05 Mins each)</i>		
	<i>Leveraging L-Band passive remote sensing data using models and other sensors over India</i>	<i>Al Bitar A et al., CESBIO/CNRS, France</i>	<a href="#">P4-S1</a>
	<i>Implementation of Evolutionary Computing Algorithms in PolSARpro SIM Tool</i>	<i>Anil Kumar, Univ. Petroleum &amp; Energy Studies, Uttarakhand</i>	<a href="#">P4-S2</a>
	<i>Simulation studies for NISAR using the existing models and generation of new models for NISAR Applications</i>	<i>OPN Calla et al., ICRS-Jodhpur</i>	<a href="#">P4-S3</a>
	<i>Radiometric and Geometric Accuracy of Hybrid Polarimetric RISAT-1 and Comparison of Decomposition Parameters with RADARSAT-2 SAR data</i>	<i>Rajesh Jeyakrishnan et al., IIT-Bombay</i>	<a href="#">P4-S4</a>
1100 – 1130	<i>Tea Break</i>		
1130 – 1300	<b>Breakout-1:</b> Three application areas in three parallel sessions; Venue and Co-chairs for applications are listed below:		
	<b>Ecosystems</b>	New Auditorium – Main lecture Hall	Prof. Paul Siqueira, UMass & Shri Kamaljeet Singh, FSI
	<b>Geosciences and Hazards</b>	Vikram Hall – Main lecture Hall	Prof. Mark Simons, Caltech & Dr. Shri. V. Singaraju, GSI
	<b>Cryosphere, Atmosphere, Ocean and Coasts</b>	Vikram Hall – Horse Shoe Room	Dr. Ian Joughin, Washington University & Shri D.D. Joshi, Director (NR), GSI
1300 – 1400	<i>Lunch Break</i>		
1400 - 1430	<b>Poster Session -2 (First-floor Lobby of New Auditorium)</b>		
1430 – 1530	<b>Breakout-2:</b> by application area (Same as Breakout-1) (Chairs/ Co-chairs to remain same)		
1530 – 1600	<i>Tea Break</i>		
<b>1600 – 1800: PLENARY SESSION – V (Concluding Session)</b> <b>(Panellists: Shri Tapan Misra, Dr. Paul Rosen, and others-TBD)</b>			
1600 - 1630	Reports from Breakout sessions	Breakout Co-Chairs	
1630 - 1730	General Discussions Concluding Remarks	Expert Panel	
1730 – 1735	<i>Vote of Thanks and Adjourn</i>		Anup Das, SAC

**ECOSYSTEM Break-Out**  
**(Co Chairs: Prof. Paul Siqueira, UMass & Shri Kamaljeet Singh, FSI)**  
(New Auditorium – Main Lecture Hall)

Breakout Session – 1 (20 Nov., 1130 – 1300 Hrs)			PDF
1130 - 1220	<b>Short Presentations – 05mins each (10 Nos)</b>		
	<i>Ecosystem changes in Gulf of Kachchh using remote sensing: A case study</i>	Jayendra Lakmapurkar – Gujarat Ecology Society	<a href="#">ES-01</a>
	<i>Tropical deciduous forest biomass assessment using multi-frequency polarimetric and interferometric X, C and L band SAR data and possible outcomes from NISAR data.</i>	L.K. Sharma et al - Central University of Jharkhand, Ranchi	<a href="#">ES-02</a>
	<i>Space-borne PolInSAR based forest parameter estimation over Indian forests</i>	Unmesh Khati – IIT-Bombay	<a href="#">ES-03</a>
	<i>Muti date and multi-frequency polarimetric SAR data for discrimination and monitoring of crops varying in biomass potential</i>	K V Ramana et al. – NRSC, Hyderabad	<a href="#">ES-04</a>
	<i>The potential of L-band dual polarization ALOS PALSAR data in the assessment of above ground biomass (AGB) in the Corbett Tiger Reserve (CTR)</i>	Yogesh Kumar et al. – FSI, Dehradun	<a href="#">ES-05</a>
	<i>Integration of SAR and LiDAR remote sensing using machine learning based regression model for forest aboveground biomass estimation</i>	Rohit Mangla et al. – IIRS, Dehradun	<a href="#">ES-06</a>
	<i>Tomographic processing of fully polarimetric space-borne SAR data for backscatter power retrieval at different heights of forest vegetation</i>	Sushil Kumar Joshi et al. - IIRS, Dehradun	<a href="#">ES-07</a>
	<i>Determination of backscattering response of different land and biodiversity features using Radarsat data</i>	Ramandeep Kaur M. Malhi et al. – MSU, Vadodara	<a href="#">ES-08</a>
	<i>Fusion of SAR and high spectral resolution images for forest parameters estimation</i>	Rama Rao Nidamanuri et al. – IIST, Trivandrum	-
	<i>Monitoring of crop growth and soil moisture retrieval using NISAR data</i>	Hari Shanker Srivastava – IIRS, Dehradun	<a href="#">ES-10</a>
1220 – 1300	<b>Discussion</b>		
Breakout Session – 2 (20 Nov., 1430 – 1530 Hrs)			PDF
1430 – 1500	<b>Short Presentations – 05mins each (06 Nos)</b>		
	<i>Retrieval and validation of soil moisture from Radar Imaging Satellite (RISAT-1) FRS-1 data</i>	K.S. Rawat et. al. – IARI, New Delhi	-
	<i>Surface soil moisture retrieval from temporal SAR data and soil map</i>	S. K. Tomer et al. – IISc, Bangalore	<a href="#">ES-12</a>
	<i>Investigation on Soil Moisture Retrieval Model using S-band and L-band SAR data</i>	Sujata Dash et al. – DTRL, Delhi	<a href="#">ES-13</a>
	<i>Potential assessment of RISAT-1 compact polarimetric SAR data for soil moisture estimation</i>	G. G. Ponnurangam et al. – IIT-Bombay	<a href="#">ES-14</a>
	<i>Application of NISAR data in soil moisture and crop parameter estimation</i>	OPN Calla et al. - ICRS, Jodhpur	<a href="#">ES-15</a>
	<i>Study of soil moisture in vegetated area</i>	Rishi Prakash.- GEU, Dehradun	-
1500 – 1530	<b>Discussion</b>		

**GEOSCIENCES AND HAZARDS Break-Out**  
**(Co-Chairs: Prof. Mark Simons, Caltech & Shri. V. SingaRaju, GSI)**  
(Vikram Hall – Main Lecture Hall)

Breakout Session – 1 (20 Nov., 1130 – 1300 Hrs)			PDF
1130 - 1215	<b>Short Presentations – 05mins each (09 Nos)</b>		
	<i>Utility of SAR imagery in Uranium Exploration</i>	A. K. Chaturvedi - AMD, Hyderabad	<a href="#">GS-01</a>
	<i>Using InSAR to Improve our Understanding of Fault Physics</i>	Mark Simons - California Institute of Technology	-
	<i>Landslide monitoring using InSAR technology</i>	Amitansu Pattanaik – DTRL, Delhi	-
	<i>Co-seismic and early post-seismic deformation due to the 25 April 2015, Mw=7.8 Gorkha, Nepal earthquake from InSAR and GPS measurements</i>	K.M. Sreejith et al. – SAC, Ahmedabad	-
	<i>Quantification and analysis of mining subsidence using a developed GUI based DInSAR processing tool</i>	Tapas Kr. Dey et al. – IIT-Kharagpur	<a href="#">GS-05</a>
	<i>Assessment of Land Subsidence induced due to Ground Water and Hydrocarbon Extraction in Gujarat State</i>	Parul R Patel et al. – NIRMA University	<a href="#">GS-06</a>
	<i>Climate Induced Hazards in the Mountain Regions of North-Western Himalaya, Himachal Pradesh, India.</i>	S.S. Randhawa et al. - H. P. State Centre on Climate Change	<a href="#">GS-07</a>
	<i>Application of Remote Sensing in Hydroelectric Projects with Special Reference to Tawang Hydro Electric Projects, Arunachal Pradesh</i>	Sumit Dabral et al. – NHPC, Arunachal Pradesh	-
	<i>Study of Ground Deformation of Kolkata Area Using PSInSAR</i>	Kousik Biswas et al. - IIT-Kharagpur	<a href="#">GS-09</a>
1215 – 1300	<b>Discussion</b>		
Breakout Session – 2 (20 Nov., 1430 – 1530 Hrs)			PDF
1430 – 1500	<b>Short Presentations – 05mins each (06 Nos)</b>		
	<i>Surface deformation measured by SAR Interferometry in response to changes in hydraulic head.</i>	Hrishikesh Kumar et al. – SAC, Ahmedabad	<a href="#">GS-10</a>
	<i>Pre-, Co- and Post- seismic crustal deformation associated to 25th April 2015, Mw 7.8 Gorkha, Nepal earthquake constrained by continuous GPS data</i>	P. S. Sunil et al. – IIGM, Mumbai	-
	<i>Flood hazard vulnerability &amp; risk assessment using remote sensing &amp; GIS approach: A case study</i>	Kumar Ramjee Prasad et al. – BRSAC, Patna	-
	<i>SAR, In-Situ and GIS Data Integration for Drought Early Warning</i>	P M Udani et al. - ISTAR, Anand	<a href="#">GS-13</a>
	<i>Land deformation mapping of a part of Mumbai city using PSInSAR technique and L-band data</i>	Shweta Sharma et al. – SAC, Ahmedabad	<a href="#">GS-14</a>
	<i>Use of NISAR Datasets for Natural disasters Management</i>	Kishan Lal Gadri et al. – ICRS, Jodhpur	<a href="#">GS-15</a>
1500 – 1530	<b>Discussion</b>		

**CRYOSPHERE, ATMOSPHERE, OCEAN & COASTS Break-Out**  
**(Co-Chairs: Dr. Ian Joughin, University of Washington & Shri D.D. Joshi, Director (NR), GSI)**  
(Vikram Hall – Horse-Shoe Room)

Breakout Session – 1 (20 Nov., 1130 – 1300 Hrs)			PDF
1130 - 1215	<b>Short Presentations – 05mins each (09 Nos)</b>		
	<i>Spatiotemporal variations in Surface Velocity of the Gangotri Glacier, Garhwal Himalaya, India: Study using Synthetic Aperture Radar Data</i>	S. P. Satyabala – IISc, Bangalore	-
	<i>Glacier classification and movement estimation using SAR interferometric and polarimetric techniques</i>	Sahil Sood – CSKHPKV, Palampur	-
	<i>Snow parameter estimation using advanced PolSAR techniques</i>	Surendar Manickam et al. – IIT Bombay	<a href="#">CAO-03</a>
	<i>Estimation of firm depth of Himalayan glacier by using C band SAR data</i>	Sanchayita Das et al - SAC, Ahmedabad	<a href="#">CAO-04</a>
	<i>Glacier domain mapping with focus on crevasses development for retreat analysis in Pensilungpa glacier, Zaskar Valley, J&amp;K, India</i>	Arvind Chandra Pandey - Central University of Jharkhand	<a href="#">CAO-05</a>
	<i>Snow, glacier and ice sheet studies using L and C-band SAR data in parts of Himalaya and Antarctic</i>	Praveen K. Thakur et al. – IIRS, Dehradun	<a href="#">CAO-06</a>
	<i>The Applications of L-band and S-band Radar Measurements to Monitor Cryosphere</i>	Shubhra Mathur et al.- ICRS, Jodhpur	<a href="#">CAO-07</a>
	<i>Application of SAR for Himalayan Cryosphere Studies</i>	Sanjeev Kumar et al. – SASE, Dehradun	-
	<i>Retrieval of Ocean Internal Wave Parameters from NISAR Images</i>	A K Varma et al. – SAC, Ahmedabad	-
1215 – 1300	<a href="#">Discussion</a>		
Breakout Session – 2 (20 Nov., 1430 – 1530 Hrs)			PDF
1430 – 1500	<b>Short Presentations – 05mins each (06 Nos)</b>		
	<i>Determination of ice velocities over Antarctic Glacier using RISAT-1 data</i>	Sandip R. Oza et al. - SAC, Ahmedabad	-
	<i>Antarctic Iceberg &amp; Sea Ice Drift using SAR Data</i>	D. Ram Rajak et al. - SAC, Ahmedabad	-
	<i>Hot Spots of Antarctic Ice Sheet Margins from RISAT-1 CRS Regional Mosaic</i>	P. Jayaprasad et al. - SAC, Ahmedabad	-
	<i>Possible Applications of NISAR data in Ocean Circulation and Marine dispersion Modelling activities</i>	C.Venkata Srinivas - IGCAR, Kalpakkam, Tamil Nadu	<a href="#">CAO-13</a>
	<i>SAR interpretation of oceanic internal wave characteristics in north Bay of Bengal</i>	Prasad K. V. S. R et al. - Andhra University, Hyderabad	-
	<i>Application of SAR imagery for oil spill monitoring and management</i>	M.T Babu et al. – NIO, Goa	<a href="#">CAO-15</a>
1500 – 1530	<a href="#">Discussion</a>		